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| 09/654,165 | 09/01/2000 | Itsuto Nakanishi | 043931/0114 | 6017 |

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EXAMINER

LUK, EMMANUEL S

| ART UNIT | PAPER NUMBER |
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1722

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DATE MAILED: 06/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

TC-4

Office Action Summary

Application No.

09/654,165

Applicant(s)

NAKANISHI, ITSUTO

Examiner

Emmanuel S. Luk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-25, 28 and 30-35 is/are allowed.
- 6) ☒ Claim(s) 26, 27, 29 and 36-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 26, 27, 29 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 26, 27 and 29, the phrase "that they actuate" is indefinite since it can not be determined whether 'they' relates to the actuators or the injection nozzles.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 39 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Reitan.

Reitan teaches an array of injection nozzles (44, 46) with each nozzle having a melt channel (62) with a movable valve pin in the melt channel, the valve pin having a driven portion (Fig. 3, 4) and tip end (82) that controls the material flow through a mold gate (52), a melt distribution manifold (26), an actuating assembly comprising an actuator (86) and a common linkage element (71) that is driven by the actuator to move the valve pins in unison, the actuator is located between the manifold and the tip ends of the valve pins (Fig. 2). The common linkage element is also located between the melt distribution manifold and tip ends of the valve pins (Fig. 2).

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claim 39 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Belous (US 6,183,239 B1).

Belous teaches an array of injection nozzles (25) with each nozzle having a melt channel (55) with a movable valve pin in the melt channel, the valve pin having a driven portion (66) and tip end (50) that controls the material flow through a mold gate (35), a melt distribution manifold (15), an actuating assembly comprising an actuator (78) and a common linkage element (75) that is driven by the actuator to move the valve pins in unison, the actuator is located between the manifold and the tip ends of the valve pins (Fig. 1). The common linkage element is also located between the melt distribution manifold and tip ends of the valve pins (Fig. 1).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gellert (4,923,387) in view of Kowtko et al (5,066,216).

Gellert teaches an injection nozzle (10) with a central bore (16) and movable valve pin (66) within the bore, the pin having a tip end (80) and driven portion (64), the nozzle having a manifold (42) and an actuating assembly comprising a linkage element (62) and a plurality of actuators (74). The actuators are located between the tip end of the nozzle and the linkage element and are flanking the nozzle (Fig. 1).

Gellert fails to teach an array of injection nozzles and at least one actuator centrally located among the injection nozzles.

Kowtko et al teaches an array of injection nozzles (88) having axial bores (86) and movable shut off pins (96) within the bores. The pins are affixed to a linkage

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element (94) that is driven by an actuator (112) that is located centrally to the nozzles (Fig. 6). The movement of the actuator controls the actuating movement of the linkage element and the valve pins within the nozzles. The common linkage elements in both Gellert and Kowtko are similar with the valve pin affixed to the element that is moved by a piston in an up and down direction. It would have been obvious to one of ordinary skill in the art to modify Gellert with an array of nozzles and valve pins all connected to a single linkage element because this a duplication of parts and thus allowing for a multiplied effect of controlling the opening and closing of a plurality of injection nozzles instead of one. This allows for the multiplied effect of several cavities having material flowed into simultaneously instead of one. The position of the actuator above or below the linkage element is interchangeable since the up and down movement moves the linkage element to open or close the nozzles. Thus, it would have been obvious to one of ordinary skill in the art to substitute the central actuator with an actuator taught by Gellert and still have the same function of moving the valve pins.

It would have been obvious to one of ordinary skill in the art to modify Gellert with an array of injection nozzles and a centrally located actuator as taught by Kowtko because it allows a plurality of injection nozzles to be opened and closed by a single linkage element.

Allowable Subject Matter

8. Claims 1-25, 28 and 30-35 are allowed.

9. Claims 26, 27 and 29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or suggest a first and second array of injection nozzles, each nozzle having a melt channel and valve pin movable within the channel, a melt distribution manifold between the first and second arrays and in fluid communication with the arrays, a first and second actuating assembly, each actuating assembly comprising at least one actuator and a common linkage element driven by the actuator and linked to all of the valve pins in the respective array of injection nozzles to move the valve pins in unison. The closest prior art Gellert ('258 and '971), Reitan and Belous all teach an array of injection nozzles having a linkage element that actuates the nozzles. They do not teach a second array of nozzles with the manifold located between the first and second arrays. Gellert (4,212,626) teaches a stack molding system having two injection nozzles that have a manifold plate (65) between. Gellert fails to teach a linkage element to two arrays of injection nozzles and that both arrays communicate with the manifold.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel S. Luk whose telephone number is (703)


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305-1558. The examiner can normally be reached on Mondays through Thursdays from 6:30 AM to 4:00 PM and alternate Fridays from 6:30 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan H. Silbaugh can be reached on (703)308-3829. The Rightfax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

E. L.
June 10, 2002


JAN H. SILBAUGH
SUPERVISORY PATENT EXAMINER
ART UNIT ~~5~~1722
06/11/02